

```

calc_Css <- function(Params,dose=1,doses.per.day=NULL,days=100,timepoints=1000)
{
  if (is.null(doses.per.day))
  {
    # Assume dose is in mg/kg BW/day, convert to mg/kg BW/h to give output in mg/L:
    dose <- dose/24
    QGFRc <- get_param("QGFRc",Params,"calc_Css") #L/h/kgBW
    fub <- get_param("fub",Params,"calc_Css") # unitless fraction
    return(dose/(QGFRc*fub+calc_Hepatic_Clearance(Params)))
  } else {
    MW <- get_param("MW",Params,"calc_Css")
    time.interval <- 24/doses.per.day
    dose <- dose/doses.per.day/MW
    DietInput<-matrix(c(seq(0,days*24,time.interval),rep(dose,days*doses.per.day),0),ncol=2)
    out <-
    vliver_pbpbk(sort(unique(c(seq(0,days*24,time.interval),seq(0,days*24,days*24/timepoints)))),c(Params[names(Params)!=="MW"],list(DietInput=DietInput)))
    Average_Conc <-
    mean(out$result[round(dim(out$result)[1]*0.8):round(dim(out$result)[1]*0.9),"Cart"])*MW
    DietInput<-matrix(c(seq(0,days*24,time.interval),rep(dose,days*doses.per.day),0),ncol=2)
    out <-
    vliver_pbpbk(seq(0,days*24,days*24/timepoints),c(Params[names(Params)!=="MW"],list(DietInput=DietInput)))
    Average_Conc2 <- mean(out$result[round(dim(out$result)[1]*0.9):dim(out$result)[1],"Cart"])*MW
    if (Average_Conc2 > 1.1*Average_Conc)
    {
      maxinter <- 10000
      days <- 10000
      DietInput<-matrix(c(seq(0,days*24,time.interval),rep(dose,days*doses.per.day),0),ncol=2)
      out <-
      vliver_pbpbk(seq(0,days*24,days*24/timepoints),c(Params[names(Params)!=="MW"],list(DietInput=DietInput)),maxinter=maxinter)
      Average_Conc <- mean(out$result[round(dim(out$result)[1]*0.9):dim(out$result)[1],"Cart"])*MW
    }
    return(Average_Conc)
  }
}

```